

Green Scene: Seven Billion and Counting

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If there is any significance in celebrating events with zeros in them, then the human race has just passed a big milestone. Statisticians estimate that as of October 31, the planet now officially supports seven billion of us. It's questionable whether this merits a celebration or is more a time for thoughtful concern. While it took us approximately a hundred thousand years to reach our first billion in 1804, it was only 12 years ago that we reached the 6 billion mark. As David Suzuki has often pointed out, the Petri dish in a laboratory that is half full of bacteria is only one synchronized cell division (i.e., a mere moment of time) away from reaching full capacity.

When will planet earth reach its capacity for people? Some scientists think we have already reached that point while others suggest we could support a population of 9-10 billion as long as we learn to manage our resources more wisely. There is some optimism for thinking population growth will slow considerably in the near future. As nations become more developed, as the certainty grows that children will survive to adulthood and as women become educated and are allowed to control the number of children they have, population growth does diminish. Assuming a reproductive rate of 2.1 children per couple is needed for replacement, several developed nations, including Canada, are already somewhat below the replacement rate. This is encouraging.

One big problem is that most people in the world can still only dream of living lives as comfortable as that of the average Canadian. If everyone on the planet could live our lifestyle, would there still be ample food to sustain us and sufficient water for agriculture and other human uses? Would there be an adequate supply of rare earth metals if seven billion people had cell phones, laptops and TV sets? And, if everyone did have these gadgets, could we generate enough electricity to keep them all running as well as homes comfortably warm (or cool - as the need may be)? Sadly, the answer to at least some of these questions is probably no. For example, it is estimated that if we need to produce enough food to feed several billion more people, we would have to switch to a mostly vegetarian diet, avoid wasting the huge portion of food that we now do and eliminate inefficient irrigation practices. How would you feel about eating more peanut butter sandwiches and bruised apples but fewer beefsteaks?

And consider, for a moment, the thirty million or more other species with which we share this planet. Surely, they deserve a little space. Scientists can calculate the annual net primary productivity (NPP) of photosynthesis which is the process by which plants, phytoplankton, etc., capture energy from the sun and on which all life on earth ultimately depends. They estimate humans now use at least 30% of land-based NPP for food crops and pastures. That's a big piece of the pie for only a single species and doesn't leave much photosynthetic capacity for all the other remaining terrestrial animals that also need to eat to survive. In fact, we rely on other species for a wide number of so-called ecosystem services. One third of the food we eat comes courtesy of pollination services provided by insects, birds and bats. We are also utterly dependent on a host of other small animals, bacteria and fungi that recycle waste into fertile soil. If truth be told, we really should be giving a little more land back to nature.

The ability of the planet to support an ever growing number of people is now being further challenged by the impacts of global warming caused mainly by fossil fuel combustion. Changes in weather patterns have led to crop failures in areas where semi-arid land appears to be converting into desert. In other parts of the world, excessive rainfall is eroding productive farmland. Even small shifts in weather patterns, such as wetter springs can delay the planting of crops and reduce production levels.

Several years ago, Dr. Williams Rees at UBC introduced the concept of an ecological footprint – the amount of land we require to meet all our needs based on how consumptive our lifestyles are (www.footprintnetwork.org). Sadly, if everyone on earth were to live like Canadians, we would already require about four planets to sustain us. If we really want to achieve a fair and just world, it seems we need to do a little proverbial belt tightening to reduce our demands. A shrinking population would make meeting that challenge just a little easier.